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U.S. Department of Justice
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Bureau of Justice Statistics



Criminal Justice
Information
Policy

Strategies
for Improving
Data Quality



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Office of Justice Programs
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Acting Director

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Information
Policy**

**Strategies
for Improving
Data Quality**

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INTRODUCTION

The accuracy and completeness of criminal history record information — best summed up by the term “data quality” — is recognized as one of the most significant information issues now confronting the criminal justice community. The criminal history record, widely considered the most vital record used in the criminal justice system, is relied upon at virtually every stage of the criminal justice process. It plays a significant role in almost every decision in the process — from the initial decision to file charges to the final decision to release an individual from custody or supervision. In addition, criminal history records are being made increasingly available outside the criminal justice system for a wide variety of noncriminal justice purposes, such as background screening for public and private employment and occupational licensing.

Unfortunately, much of the available empirical data suggest that the quality of criminal history record information in many agencies and record systems is low. Reportable actions and decisions, particularly court dispositions, often are missing from criminal history records and information that is reported may often be recorded inaccurately. As a result, criminal justice decisionmaking, as well as research and statistics that rely on criminal history data, may be compromised. Moreover, the trend toward more extensive dissemination of criminal history records for noncriminal justice purposes may also increase the risk of unwarranted harm to record subjects caused by incomplete or inaccurate records and may increase the exposure of criminal justice agencies to the risk of liability suits. For these reasons and others, increasing concern about and awareness of the quality of criminal history records has led criminal history record officials in recent years to implement initiatives to improve data quality levels.

Although few jurisdictions or agencies have fully solved the data quality problem, some criminal justice agencies, at both the state repository and local levels, have achieved notable, demonstrable success in improving accuracy and completeness levels by implementing data quality strategies that, in many cases, may be emulated by other agencies throughout the country. The purpose of *Strategies For Improving Data Quality* is to identify a number of these strategies and to provide enough information about them to enable criminal justice officials to assess the potential usefulness of the strategies in their own agencies.

In compiling these strategies, advice was sought from SEARCH Members, members of the SEARCH Criminal Justice Information Network, and other state and local criminal justice officials. Some of these persons reviewed drafts of the document to ensure that the strategies selected for inclusion are appropriate and operationally sound and are accurately and adequately described.¹

All of the strategies are appropriate for implementation in fully automated agencies, as well as in agencies that have manual information systems and procedures. However, some strategies — such as monitoring disposition reporting and implementing disposition tracking and systematic auditing systems — are more easily implemented in agencies with automated information systems. Indeed, enhanced automation is itself identified as a discrete strategy in recognition of the widely-held view that automation is an important tool in achieving enhanced data quality.

Strategies For Improving Data Quality is divided into four sections: Administrative, Data Entry, Data Maintenance and Regulatory Strategies. The five suggested Administrative Strategies require the support of high-level management in recognizing data quality as an important agency priority and in formulating specific initiatives and plans to achieve this goal. Included are strategies that suggest establishing a task force to formulate and implement a comprehensive program for improving data quality; implementing or enhancing automated systems; and performing comprehensive audits and needs analyses. The five suggested Data Entry Strategies propose ways agencies can increase data quality by collecting accurate and complete data at the point when the data first enter the criminal justice system. Included are strategies that suggest developing uniform documents and forms for data gathering, reporting and recording purposes; implementing routine system procedures such as audits and computer edit/verification programs to monitor the accuracy and completeness of new information; and using data-tracking systems to ensure arrest and disposition data are properly linked, that individual charges and counts are accounted for, and that rap sheet ambiguity is avoided. The four suggested Data Maintenance Strategies propose ways agencies can protect the

¹ See Appendix for a list of those who participated in the review of this document.

accuracy and completeness of criminal history data once the data are in the system. Included are strategies that suggest enacting mandatory reporting laws to improve arrest and disposition reporting to central state repositories; monitoring arrest and disposition reporting; improving the collection of court disposition information via prosecutor reporting; and using preprinted disposition reporting forms. In addition, it is suggested that one of the Data Entry Strategies — systematic audits — also be considered as a viable Data Maintenance Strategy. Finally, two suggested Regulatory Strategies outline specific procedures to help improve data quality levels in criminal justice information systems. Included are strategies that suggest that agencies develop written agency policies and train agency personnel who have recordhandling responsibilities.

Strategies For Improving Data Quality focuses primarily on statewide programs designed to improve data quality; much of the text describes the implementation of data quality strategies at the state level, particularly at central state record repositories. Virtually all of the strategies, however, are appropriate for implementation at any level of government, including local law enforcement agencies, prosecutors offices or courts.

This document does not describe the strategies in extensive detail or include specific procedures for implementing them. Rather, each strategy is described to enable readers to understand its purpose and how it works and to evaluate its potential usefulness in their own agencies. Officials at all levels, from state central repositories to local criminal justice agencies, should be able to identify proven strategies that are appropriate for implementation in their own agencies and to understand essentially how they work and what benefits can be derived from them.

This document is intended only to provide examples of workable strategies. There may be alternative strategies which are appropriate for use by individual agencies and which will also achieve improved data quality. Due to varying factors at any particular agency, the application of a strategy to a system does not necessarily guarantee its success.

I. ADMINISTRATIVE STRATEGIES

Administrative Strategies for improving data quality are those that reflect high-level management commitment to data quality enhancement and that are essential first steps or underlying themes in a comprehensive program to improve the quality of criminal history records. They include:

- identifying improved data quality as an agency priority;
- establishing a task force on data quality;
- recognizing automation as an important data quality tool and planning for new automated systems or enhancing existing automated systems;
- undertaking an initial baseline audit of data quality levels and procedures; and
- analyzing the data quality needs of the agency and of related offices or agencies.

STRATEGY:

MAKING IMPROVED DATA QUALITY A PRIORITY

Formally Recognizing Data Quality as a Serious Agency Commitment

A theme underlying many of these data quality strategies is that significant progress in improving data quality will not be realized unless a serious commitment to such improvement is made by high-level criminal justice executives and, in particular, by criminal history record systems managers. Officials in agencies that have successfully improved data quality in their systems agree that progress came only after criminal history record data quality was identified as a specific agency priority and efforts were made to ensure that all phases of the agency's operations reflected a commitment to improving accuracy and completeness. Thus, a critical part of any program to improve data quality, whether at the statewide level or in a particular agency, must be an effort to ensure that appropriate officials and practitioners understand both the universal usefulness of the criminal history record and that improved accuracy and completeness of record information makes the job of recordkeeping easier and more effective. This understanding can be translated into a commitment to improving data quality on the part of officials who make funding available for data quality initiatives, as well as agency personnel who collect, report and enter data into information systems.

High-level Directives

Such a commitment should be formalized by an announcement or directive issued by appropriate officials, such as (in the cases of a statewide commitment) the governor, the chief justice of the state supreme court, or the administrator of state courts. The directive should identify data quality improvement as a priority and should identify officials who will be responsible for formulating, implementing and evaluating data quality initiatives.

The importance of a high-level executive commitment to data quality cannot be overstated. Virtually everyone in the criminal justice community acknowledges the importance of data quality. Too often, however, such acknowledgment is not followed by appropriate action to improve data quality levels. Systems officials and criminal justice practitioners commonly believe that they are too busy with other essential duties to undertake the additional effort of

improving data quality. In some cases, funding for additional staff and equipment may be needed and may seem unattainable. As a result, improved data quality may remain an acknowledged, but largely neglected, long-range goal for criminal justice agencies, and practitioners may continue to struggle to perform their duties using data of less than acceptable quality. To remedy this situation, a person or a group must decide that data quality improvement is an important, attainable goal, and must take action to ensure that all involved officials and personnel understand this commitment and support it through appropriate action.

Summary

The essential purpose of this strategy is to ensure that: officials and practitioners understand the usefulness of the criminal history record and the importance of high data quality; improved data quality is identified as a priority by high-level officials who can direct that appropriate action be taken to implement the goals of this priority; and officials and practitioners at all levels understand the importance of cooperating in the subsequent programs and initiatives designed to make improved data quality a reality.

STRATEGY:

TASK FORCE ON DATA QUALITY

Establishing a High-level Task Force to Formulate and Implement a Comprehensive Data Quality Improvement Program

An effective strategy for making data quality a priority within a state or a particular agency, as well as for implementing specific initiatives, is the formation of a task force dedicated to and responsible for improving data quality within the state or agency. Such a task force can take the lead in promoting the concept of improved data quality as a priority goal for criminal justice and can provide statewide or agencywide leadership in developing and implementing programs designed to enhance data quality. At the state level, task forces can also help in identifying and resolving problems that transcend departmental or agency lines (such as recordkeeping problems caused by the use of disparate information systems in courts and other criminal justice agencies, some of which use different offense classification codes and recordkeeping protocols). A task force can also emphasize the need for cooperation between courts and central repositories and help to encourage cooperation by allaying judicial concerns about court autonomy and the potential misuse of court records by repositories and their user agencies.

Membership

To have the greatest impact, the membership of the task force should be as high-level as possible. If possible, the governor of the state should be the chairman of a state-level task force, or it should, at a minimum, have the governor's support and be administratively associated with the governor's office. If this is not feasible, the chief justice of the state supreme court is an excellent choice to chair the task force. Other appropriate choices include the state attorney general, particularly if the state's criminal record repository operates under his authority, and the chief executive officer of the Department of Public Safety or its equivalent.

The director of the state's central criminal record repository should be a member of the task force, since the task of data quality improvement intimately affects the repository. To help ensure the cooperation of the courts, the task force membership should include the highest ranking judicial officials possible, such as the chief justice; the chief judges of the appellate courts and the major trial

courts; the administrator of the state courts; and the official responsible for the state's judicial information system, if one exists. Other members may be drawn from criminal justice agencies throughout the state, from information system administrators or from public interest groups. Technical committees or project implementation committees may be set up as necessary to provide needed expertise and to oversee particular task force initiatives. Funding is critical to the success of any effort to substantially improve data quality and legislative initiatives, such as enactment of a mandatory reporting law, may be necessary. For these reasons, it is advisable that the state-level task force include members of the state legislature, particularly the chairs, and perhaps prominent staff members, of the judiciary and appropriations committees.

Mandate

The task force's mandate is to review the state's criminal justice information system and to implement necessary initiatives to improve data quality, ensuring that the needs of criminal justice agencies within the state are met. The task force must develop specific goals and objectives that will guide planners and will help evaluate progress. Its most important contribution, however, can be in ensuring that data quality is recognized as a priority goal of the criminal justice system and in facilitating interagency cooperation and communication to ensure successful implementation of data quality initiatives.

Summary

The high-level commitment and influence of an appropriate (preferably statewide) task force can immeasurably enhance the chances that a program to improve data quality will succeed. In the absence of such commitment, and in the absence of the involvement of officials who can ensure that appropriate action is taken, data quality initiatives often receive little more than lip service. The primary contribution of the task force can be ensuring that data quality is made a priority goal for criminal justice and helping develop and implement programs to meet this goal.

**STRATEGY:
INCREASED AUTOMATION**

***Implementing Automated Systems or Enhancing Existing
Automated Systems to Facilitate Data Quality Improvement***

Surveys show that criminal justice officials at all levels overwhelmingly believe that automation has resulted in the greatest improvement in information management in their agencies and is the single most important tool for achieving better data quality. Automated systems make it more practical and economical to implement many other data quality strategies, such as improved data entry procedures and editing, disposition monitoring and data-linking systems. Furthermore, the telecommunications components of automated systems make the reporting of arrest and disposition data easier and more economical and reliable.

Automation

A major component of any comprehensive effort to improve data quality should include consideration of new automated systems or enhancement of existing automated systems. Attempts to enhance existing automated criminal justice information systems, however, should be managed very carefully, with careful consideration given to how the systems will interact with other existing or planned systems and how these systems will be integrated into a successful statewide system. These are extremely complex issues that should receive the attention of a task force, needs assessment group or other similar group with multiagency, multidiscipline representation and technical expertise.

Automated systems can include facsimile equipment capable of transmitting fingerprint impressions over telecommunications lines, thereby making it easier and faster to positively identify record subjects. Some very advanced automated systems also possess an automated fingerprint identification capability which vastly improves the speed and reliability of fingerprint processing. Finally, the needs assessment and system analysis strategies that follow constitute a vital part of any undertaking to enhance automation and invariably result in better interagency cooperation and improvement in the efficiency of the recordkeeping operations of constituent agencies.

Summary

The automation of the recordkeeping functions of criminal justice agencies can increase both the efficiency of agency activities and the accuracy and completeness of criminal history records. Accordingly, the implementation of new automated systems — or the enhancement of existing systems — should receive careful consideration by criminal justice agencies as a major goal of any program to enhance data quality. Because of the complex issues involved with such automation, the consideration of a task force or similar group with multiagency, multidiscipline representation and technical expertise is recommended.

**STRATEGY:
BASELINE AUDIT**

***Performing a Comprehensive Data Quality Audit as the Basis
for Formulating a Data Quality Improvement Program***

Auditing is one of the most effective, yet most neglected, data quality tools. Although the Federal Regulations require annual audits of the central state repositories and representative samples from contributing criminal justice agencies,² only a few states have performed extensive audits of their repositories and only a handful have undertaken any substantial auditing of local agencies. In practically every state, therefore, a desirable early step in a program to improve data quality is a comprehensive baseline audit of the repository and representative auditing of contributing agencies to assess existing data quality levels and to identify problem areas and agencies. Using the data from such audits provides a point of reference from which agencies can work in formulating a data quality improvement program and will enable agencies to better tailor a program to fit their needs.

Audit Components

A baseline audit ideally should include an evaluation of the repository's data quality procedures, including reporting procedures applicable to contributing agencies, and an assessment of the completeness and accuracy of the criminal history database maintained by the repository. In addition, an evaluation of reporting procedures and other data quality procedures of local agencies, particularly large agencies and agencies known to have data quality problems, should be performed. A sample of repository records should be compared with source documents maintained by local criminal justice agencies, including police department arrest logs and the original court records of disposition. Transmittal forms used in forwarding information to the repository should be checked because errors often occur in transferring information onto such forms.

If possible, the audit should be performed by an outside contractor or by an independent agency such as the state auditor's office. Extensive outside audits are quite expensive, however, and it may be difficult to obtain adequate funding for such an undertaking.

² 28 C. F. R. § 20.21(c).

The goal should be to perform the most extensive and objective audit possible with available funding.

In-house Audit

If an outside audit is not feasible, an in-house audit of the repository should be performed. Much can be learned about data completeness and accuracy from a relatively inexpensive in-house audit of the repository. Although the results of such auditing may not be statistically reliable in a strict sense, they may well be adequate as baseline data for assessing the general level of data quality in a state, identifying problem areas and agencies, and formulating a strategy for data quality improvement.

An in-house audit should include an evaluation of the repository's data quality procedures and an assessment of existing levels of completeness and accuracy based on available data. The audit can include any number of activities, such as:

- comparing repository fingerprint cards with the identification and arrest charge components of sample rap sheets;
- undertaking representative sampling to assess the accuracy of name search and technical fingerprint search techniques used by the identification bureau;
- checking rap sheet disposition data against disposition reporting forms (if such forms are used and kept on file);
- assessing the timeliness of disposition reporting by comparing the dates of reportable events against data that indicates the dates the repository received the information or when the information was entered into the criminal history system;
- making site visits to contributing agencies to verify repository data against source documents (or sending sample records to such agencies for verification if site visits are not feasible); and
- undertaking representative sampling to assess the completeness of criminal history information (using available statistics or assumptions concerning the average time required for various reportable events to occur and be reported).

Summary

A baseline audit should be undertaken as an early step in any campaign to improve data quality. Such an audit should be as extensive as is feasible and should assist agencies in assessing existing data quality levels, identifying problems in the present system, and providing a basis for evaluating the success of data quality initiatives. In addition, a major goal of any data quality improvement program should be the establishment of continuing regular audits as a priority program, since regular auditing is universally recognized as one of the most effective data quality tools.

STRATEGY:
NEEDS ANALYSIS

Ensuring that Data Quality Improvement Initiatives Reflect the Needs of Criminal Justice Practitioners

Any program to improve data quality should include a comprehensive analysis of the information needs of the criminal justice agencies that actually use the information maintained by state and local criminal history record repositories. Whether performed by a data quality task force or some other group, such an analysis should gauge the needs of the repositories and those of criminal justice practitioners statewide who use criminal history data in performing their duties. These include practitioners in law enforcement agencies; prosecutors and trial judges; and judges responsible for first appearances, bailsetting and sentencing, since they are an often-overlooked category of criminal history record users.

Sufficient Data

The primary goal of a needs analysis is to ensure that rap sheet information is sufficient to meet the needs of practitioners at every level of the system and that it is presented in a clear and unambiguous format. If a survey of practitioners indicates that changes in the rap sheet format are necessary or that additional information should be included, these modifications should be made priority goals. Even in automated systems which would require extensive reprogramming, modifications to improve the clarity and usefulness of the rap sheet should be considered necessary and worth the cost. Although the rap sheet data may be accurate and complete, its usefulness can be seriously compromised if the format makes it difficult to understand. This is particularly the case with the many non-criminal justice users, who are unfamiliar with the criminal justice process and with technical terms and symbols.

A comprehensive, systemwide needs analysis can also help a repository determine whether its data quality improvement initiatives are properly focused to serve the needs of practitioners. In addition, such an analysis may assist criminal justice agencies in better understanding their own data needs. This can result in agencies improving their own procedures and forms in order to make their jobs easier and in increasing cooperation in implementing any number of data quality improvement initiatives. (If reporting agencies perceive that they will benefit from new initiatives that require

little substantial work, the success of data quality improvement strategies fares better.)

Summary

Whether included within a baseline audit as part of an automation enhancement program, or whether undertaken separately, a careful analysis of the information needs of criminal justice practitioners served by state and local criminal history record repositories should be an essential part of any data quality improvement program. Such an analysis can ensure that rap sheet information sufficiently meets the needs of practitioners and that data quality improvement initiatives are properly focused. It can also enhance the support for such initiatives of the practitioners who use the data and determine the success of any data improvement program.

II. DATA ENTRY STRATEGIES

Data Entry Strategies for improving data quality are those that can improve data entry procedures to facilitate the collection of accurate and complete data and minimize the likelihood of that erroneous data will find its way into criminal history record systems. They include:

- developing uniform data collection documents;
- implementing systematic edit and verification techniques;
- implementing unique-number tracking systems to ensure that arrest and disposition data are properly linked and that reported information is appended to the right rap sheet; and
- using review procedures to avoid ambiguity in rap sheets by eliminating disparities between arrest charges and disposition information.

**STRATEGY:
UNIFORM DOCUMENTATION**

***Developing Uniform Documents and Forms for
Reporting and Recording Criminal History Data***

Using uniform documents and forms is an often-overlooked, but very important, strategy for improving the quality of data entered into criminal history systems. The use of uniform documents, forms, offense codes and reporting procedures makes data collection easier and more economical; helps to ensure that the repository will receive appropriate data; and makes it easier to interpret and verify reported data.

Repository/Agency Development

Ideally, the documents, forms, offense codes and reporting procedures should be developed jointly by the repository and contributing criminal justice agencies. This can be accomplished through a needs analysis of the type described in Section I, Administrative Strategies. This should make it possible to educate contributing agencies on the needs of the repository and other criminal justice agencies and to achieve greater cooperation in developing uniform documents, forms and procedures. In addition, particular agencies may redesign their data handling procedures to ensure that the data needed by the repository is collected and reported in the necessary format without entailing additional work by agency personnel. Particularly in automated agencies, repository reporting can be a painless by-product of the day-to-day case processing and data gathering activities undertaken by agency personnel.

Summary

In addition to improving data quality, a real benefit of uniform data collection documents, forms, offense codes and reporting procedures is the cooperative effort between repositories and criminal justice agencies that is generally required to produce the agreement on uniformity. Documentation and reporting procedures, therefore, can become a method for improving communication and cooperation among the various component agencies of the criminal justice system.

STRATEGY: SYSTEMATIC AUDITS

Implementing Routine System Procedures to Enhance Data Accuracy and Monitor System Operations

All criminal justice agencies, whether their information systems are automated or manual, can implement numerous data collection, data entry and systematic audit procedures to greatly minimize the possibility that inaccurate information will be entered or stored in their systems. There are many such procedures, and each is very effective in improving data quality levels.

Foremost, data collection documents should be designed to be easy to understand and fill out. They should capture all necessary information — while allowing no unnecessary information — in a way that minimizes the possibility of misreading or misinterpretation. All criminal justice agencies should review such documents periodically to ensure that they are properly designed and used.

Editing and Verification

Data entry edit procedures range from such manual methods as visually checking data before input to detect inaccurate or missing information to using sophisticated computer edit and verification programs. Some agencies follow a routine procedure of having at least two people check the information before it is entered into the system to ensure that source documents have been properly interpreted and that all required information has been accurately recorded. All criminal history printouts produced for dissemination, manual updating or as part of other in-house processing routines, may be visually checked to ensure that updated data are accurate and that historical data have no apparent inaccuracies.

Computer edit and verification programs are limited only by the imagination of system designers and the initiative of system managers. Various software programs to perform standard edit and verification tasks are available on the market. In addition, programs tailored to specific agency needs can be developed by system designers and programmers. These programs can check for required data fields and perform a wide variety of checks on the accuracy and consistency of information entered into the system.

Systematic Audits

Automated systems can, and should, keep logs to provide an audit trail for all transactions, including: inquiries; responses; updates; data rejections; changes and modifications; source document numbers; and operator identification codes. These logs facilitate error notification procedures and make it possible to identify operators who make frequent mistakes and who need additional training. Although it is more difficult, manual systems can keep transaction logs to store some of the above information for audit trail purposes.

Criminal justice agencies can implement programs of random inspection in both automated and manual systems. In such a procedure, sample record entries are compared against source documents to monitor accuracy and completeness levels and to ensure that data-handling procedures are being properly followed. Automated systems can be programmed to periodically print out random samples of criminal histories for this purpose. These random in-house audits should be run against all files — name indexes, fingerprint and criminal history files.

Summary

All criminal justice agencies can improve data quality through the implementation of a wide variety of data collection, data entry and systematic edit and verification procedures designed to improve data entry accuracy, to monitor data quality levels, and to ensure that system procedures are properly followed. These systems are not expensive or difficult to implement, particularly in automated systems, and can result in dramatic data quality improvements.

Note: This strategy may also be considered a helpful Data Maintenance Strategy.

STRATEGY:**TRACKING SYSTEMS — UNIQUE TRACKING NUMBERS*****Using Unique Tracking Numbers to Ensure that Arrest and Disposition Data are Properly Linked***

Aside from the failure of criminal justice agencies to report dispositions, perhaps the most difficult data quality problem faced by repositories is the proper linking of reported data to the appropriate individual and case cycle, so that arrest, prosecutor, court and correctional data can be accurately linked to the right rap sheet and arrest event. Some states have had limited success with a combination of tracking systems that help link data by subject name with the various case identification numbers assigned by criminal justice agencies. However, the few extensive repository audits undertaken have shown that accurate linking of data is best facilitated by tracking systems that use unique tracking numbers. These numbers are assigned at the arrest stage and are included with all reported data associated with that arrest as it is processed through the criminal justice system.

Unique Numbers

The unique tracking numbers may be pre-printed on disposition reporting forms or assigned by arresting agencies and passed along with case papers. An advantage of using pre-printed forms is that the tracking number can be printed on all pages of the form or on additional peel-off strips bearing the tracking numbers for use by other agencies. These strips may be attached to reporting forms or other papers passed along with the case file as the case is processed through the system, thus reducing the chance that the tracking number will be omitted or that an error will be made in entering it. A variation of this approach involves the use of bar coding on the strips or forms. Since this technology represents a significant improvement in the accuracy of data capture, its use in criminal justice information management should be carefully considered.

Whatever the approach used, it is important that the unique tracking number be assigned at the time of arrest and that it be attached to or written on the arrest fingerprint card forwarded to the central repository. In this way, the tracking number can be tied to positive identification of the arrested individual and to the charges stemming from the arrest. This will ensure that subsequently re-

ported disposition data are associated with the correct rap sheet and the appropriate arrest cycle.

In automated systems — particularly if repository reporting is automated — procedures should be implemented to ensure that the unique tracking number is accurately entered with all reported disposition data. Data entry screens should include the tracking number as a required field, and system edit procedures should reject disposition data entries that do not include the number. An additional safeguard is to include a check digit in the tracking number and institute system edit procedures to monitor accurate keying in of the number.

Case ID Number

A strategy for increasing the effectiveness of unique tracking number systems is to require or encourage prosecutors, courts, corrections and other appropriate agencies to use the tracking number as their case identification number. Although it may be difficult to persuade agencies to change long-established case numbering systems, the goal of a single systemwide tracking/case numbering system is well worth pursuing as a long-range objective. If particular agencies install automated systems or significantly modify existing automated systems, implementation of the unique tracking number as the agency's case identification number may be included in the design.

Aside from facilitating data linking, unique tracking numbers also increase the effectiveness of error notification procedures and delinquent disposition monitoring systems. In addition, tracking numbers can greatly facilitate data quality auditing if the number is included on all source documents.

Summary

The implementation of data tracking systems that use unique numbers should be considered as a data quality strategy. It is difficult to overrate the importance of a unique tracking number system as a data quality initiative. Such systems can ensure that arrest and disposition data are properly linked, thus enhancing the accuracy of rap sheets and making them easier to read. They also make other data quality procedures — such as data quality auditing and error notification — more effective.

STRATEGY:**TRACKING SYSTEMS — CHARGE TRACKING**

Using Unique-Number Tracking Systems Keyed to Individual Charges and Counts to Ensure that All Charges and Counts are Accounted For

Some states have implemented unique-number tracking systems that assign a single number to an arrest and all of the charges stemming from it. Although some of these systems work relatively well in enabling the repository to associate disposition data with previously reported arrest cycle data, they do not provide the basis for reliably associating particular dispositions with particular charges and counts. Since most arrests result in multiple police charges, and since these charges may be modified or augmented at later stages of the criminal process (e.g., after initial review by the prosecutor, by a grand jury, or as a result of plea bargaining), it is common for the repository to receive court dispositions for a particular arrest cycle on charges other than those initially reported by the police and entered in the charge column of the rap sheet. Although a single tracking number may enable the repository to append the disposition data to the proper arrest cycle, the resulting rap sheet may be ambiguous: it may be difficult or impossible to determine the disposition of all of the charges or even whether all charges have been disposed. Audits and needs analyses have shown that this problem is a source of confusion and detracts more from the usefulness of the rap sheet than repository administrators and other record officials often believe.

Suffix Numbers

A strategy agencies with tracking systems can use to solve this problem is to assign a suffix number to each charge and count reported by the police and entered on the rap sheet, for example, 01, 02, 03. These numbers, in combination with the tracking number for the arrest cycle, should then be used in subsequent processing of the case for reporting disposition data to the repository. If a charge or count is dropped or modified by the prosecutor, this information may be reported to the repository by tracking and charge numbers and can be shown clearly on the rap sheet. If new charges are added by a grand jury, these charges can be assigned new numbers — e.g., 04, 05 — and reported to the repository. In this way, every charge shown on the rap sheet can be accounted for or it

can be determined which reported dispositions relate to particular charges, even if a disposition is not reported and recorded for each charge.

This strategy can be implemented as an entirely new tracking system in jurisdictions which currently do not have a tracking system or can be implemented as a modification to existing tracking systems that do not have charge-tracking capabilities. The benefit of charge-tracking is that it permits the repository to account for every charge shown on the rap sheet for a particular arrest, thus eliminating a source of rap sheet ambiguity.

Summary

In order to link disposition data with the particular charges and counts associated with a particular arrest cycle, agencies should consider using unique-number tracking systems that assign suffix numbers to each charge and count. This will allow agencies to easily determine the disposition of every charge shown on the rap sheet and will help end rap sheet ambiguity.

STRATEGY:

TRACKING SYSTEMS — INITIAL RAP SHEET CHARGES

Including Charges on Rap Sheets Only After They Have Been Reviewed by the Prosecutor

In most states, the repository enters initial charge data on the rap sheets from the arrest fingerprint cards sent in by the police. It is a common practice in practically all jurisdictions, however, for the charges made by the police at the time of arrest to be subsequently modified by the prosecutor. After reviewing a case, the prosecutor may decide either to not prosecute some charges, to modify existing charges or to add new charges. This creates a source of confusion for agencies, since subsequent court disposition data may not match the initial arrest charges shown on the rap sheet. This problem can be solved by a unique-number charge-tracking system, as described in the previous strategy, combined with full reporting by all components of the criminal justice system.

Prosecutor Review

If implementation of a unique-number charge-tracking system is not feasible, this problem may be handled in part by instituting this procedure: charges will not be recorded on a rap sheet until after they have undergone initial review by the prosecutor's office. The feasibility of this strategy will depend, of course, upon how cases are processed in particular jurisdictions and how data are reported to the repository. It will work best in jurisdictions where the prosecutor reviews cases before the defendant's initial appearance or arraignment, and where the courts with first appearance/arraignment jurisdiction cooperate in reporting disposition data to the repository.

If this is the case, the repository may follow the practice of recording only identification data, arrest event data and tracking numbers from the arrest fingerprint card. The charges shown on the rap sheet would be reported by the court and would be those for which the defendant will appear for bailsetting or arraignment. Since, in this scenario, the charges would have already been reviewed by the prosecutor, "unpapered" police charges would not appear. The charges recorded on the rap sheet would be those that are more likely to be actually prosecuted and result in trial court dispositions. Thus, perhaps the greatest source of disparity between

initial rap sheet charges and court dispositions will have largely been eliminated.

A variation of this strategy is for the prosecutor to report charge data to the repository after his initial review of the case; the repository then enters this data on the rap sheet as the initial charge data. There are other variations, of course; but the overall goal is to record initial charge data on the rap sheet only *after* the charges have been reviewed by the prosecutor. This eliminates inclusion of unpapared police charges for which subsequent court dispositions will not occur and assures inclusion of charges added by the prosecutor after the case is forwarded by the police.

Summary

A troublesome source of ambiguity in rap sheets may be eliminated by a practice of entering initial charges on the rap sheets only after they have been reviewed by the prosecutor's office (and perhaps initially filed in a court of first appearance). This practice is preferred to entering charges from arrest fingerprint cards.

III. DATA MAINTENANCE STRATEGIES

Data Maintenance Strategies for improving data quality are those that provide an ongoing check on the accuracy and completeness of the information contained in databases. One such strategy is to periodically print out sample records to verify their accuracy by comparing them with source documents or other available data. This strategy, first discussed in Section II, Data Entry Strategies, is part of suggested systematic audit procedures that can also be used as a viable Data Maintenance Strategy.

Other proven Data Maintenance Strategies include:

- legally mandating arrest and disposition reporting;
- implementing systems for monitoring arrest and disposition reporting;
- obtaining court disposition data through reporting from prosecutors; and
- using preprinted reporting forms to facilitate disposition reporting and linking of arrest and disposition data.

STRATEGY:
MANDATORY REPORTING

***Enacting Laws Requiring the Reporting of Criminal
History Record Data***

Every state should consider enacting a law that specifically requires mandatory reporting to the central repository of all information to be included on the rap sheet. This includes arrest data and all subsequent actions and dispositions occurring in the case up to, and including, release of the record subject from the cognizance of any segment of the criminal justice system. Thus, the law should deal with arrest warrants, arrest data, and information concerning case processing by local detention centers, bail agencies, prosecutors, trial and appellate courts, parole and probation agencies, correctional agencies (including departments of mental health) and the governor's office (executive clemency).

Specifics

A mandatory reporting law should specify the information to be reported and identify the official or agency responsible for reporting each reportable event and the time period within which reporting should take place. The law should specify penalties for noncompliance. Numerous states have enacted detailed reporting laws of this type which may be used as models. At least one state's law requires that the salary of officials be withheld if they fail to comply with reporting requirements.

The reporting law should authorize the state's central criminal record repository or some other appropriate body to issue regulations to implement the law. Several states have vested this responsibility jointly in the repository administrator and the chief justice of the state supreme court or state court administrator. It is critically important that the law authorize these officials to specify the form in which information must be reported and to develop and require the use of uniform data collection and reporting forms and procedures. Specific strategies in the legislation should, of course, reflect individual state and local administrative structures and procedures.

Participation

Criminal justice officials from all segments of the system should be involved in developing and drafting the reporting law. If widespread agreement can be reached concerning the need for re-

porting and the responsibility for reporting specific information, this agreement can be the beginning of the kind of interagency cooperation that is necessary for achieving significant data quality improvement.

While mandatory reporting laws do not guarantee high levels of reporting (since they are often difficult to enforce, despite the inclusion of penalties), they are generally regarded as helpful and in some cases have proved highly effective. At the very least, they emphasize the state's commitment to data quality improvement, and they can be cited as legal authority for programs to improve reporting.

Summary

Properly-drafted mandatory reporting laws should be considered a highly effective data quality strategy. Such a law can help increase arrest and disposition reporting levels, and the interagency cooperation necessary for developing such a law can benefit an overall data quality improvement program. Enactment of such a law should be a priority goal in any state that does not have one.

STRATEGY:

MONITORING DISPOSITION REPORTING

Implementing Systems to Monitor Disposition Reporting and to Identify Cases in Which Dispositions Have Not Been Reported in a Timely Fashion

One of the most effective methods for improving disposition reporting is to implement a system of regular and random audits to monitor compliance with reporting requirements. Such systems, often referred to as delinquent disposition monitoring systems, are designed to flag arrest entries for which dispositions have not been reported after a reasonable period. They can be used to monitor data reporting at all stages of the criminal justice process and are not difficult to implement, particularly in automated systems.

System Features

Implementing a delinquent disposition monitoring system first requires the establishment of a list of reportable events along with estimated time periods within which each event should occur and be reported to the repository. The monitoring system should be designed to generate a delinquency flag if a reportable event in a particular case cycle is not received within the established time period. The system also could be designed to generate a flag when a particular reported event indicates that a prior event occurred and was not reported. This would serve to alert repository personnel of the missing data; in addition, the system could be designed to trigger a notice to the appropriate criminal justice agency, requesting that it provide the missing arrest or disposition data or provide current data on the status of the case.

Delinquent disposition monitoring systems operate far more economically in automated systems than in manual systems. It is a relatively simple matter to program most automated systems to generate the necessary delinquency lists. Manual systems, however, can also establish workable disposition monitoring procedures. In these cases, monitoring can occur, for example, when requests for dissemination of particular records are made. Before an agency disseminates the printout of a requested record, it can be reviewed and, if it appears that disposition data are missing, some check — such as a telephone inquiry to a prosecutor or court official — can be made to update the record.

Delinquency lists are generated periodically in some automated systems as a routine check on data quality levels. Often, however, no further use is made of such lists due to lack of personnel or other reasons. If data quality is truly to be made a priority, further action must be taken to obtain and record the missing information, through the mailing of delinquency lists to appropriate criminal justice agencies or the assignment of field personnel to obtain the missing data.

Summary

A monitoring system that flags missing arrest and disposition data, coupled with procedures to obtain such information, can be one of the most effective ways of increasing completeness levels in criminal history record systems. This strategy operates more economically in automated systems but is also a workable strategy for agencies with manual systems. Serious consideration should be given to such procedures in all agencies that have not implemented them.

STRATEGY:

COURT DISPOSITION REPORTING BY PROSECUTORS

Obtaining Court Disposition Information from Prosecutors in Jurisdictions Where Court Reporting is Poor

Criminal record repositories face yet another serious data quality problem when they fail to obtain court disposition data. Because some judges believe that they have the least need for criminal history records and some court officials tend to maintain their independence from executive department initiatives, some states have had difficulty improving data quality through increased disposition reporting by court personnel.

Prosecutor Reporting

Some states may want to employ an approach that has proved successful in other jurisdictions — the reporting of court disposition information by prosecutors. Prosecutors generally are involved in the processing of criminal cases from soon after arrest through the conclusion of court processing. Thus, they are in a position to obtain and report not only court disposition information, but also bail, pretrial detention and grand jury data. In addition, prosecutors often make extensive use of criminal history records, and thus are aware of the advantages that can accrue from significant data quality improvements. For these reasons, their cooperation in disposition reporting may be easier to obtain in some jurisdictions than that of court personnel.

Prosecutor reporting of court dispositions can be facilitated in a variety of ways. Prosecutors can be provided with pre-printed, uniquely-numbered disposition reporting forms, as discussed in the following strategy, or repository reporting can be made a by-product of an automated prosecutor management information system. As in all initiatives of this kind, its chances of success are increased if procedures can be devised to ensure that reporting does not entail significant additional work by prosecutors. It may be possible to redesign existing forms and procedures used in the prosecutor's office to make reporting a by-product of information practices undertaken as a part of the prosecutor's normal duties. For example, reporting to the repository may be accomplished through the use of computer tapes generated by existing prosecutor management information systems.

It must be emphasized that this approach — case disposition reporting by prosecutors — should be regarded as an interim strategy. The only official court disposition information is the court record; this data should be reported, if at all possible, by judicial personnel. Efforts to enlist the cooperation of the courts should be regarded as critically important. In this regard, prosecutors may be able to assist in other ways in resolving difficulties associated with court disposition reporting by judicial personnel. For example, prosecutors may report lists of cases that have been adjudicated, thus providing a back-up on the adequacy of disposition reporting by the courts. Prosecutors may also be willing to assume responsibility for making contacts and performing necessary research to resolve ambiguities in court-reported disposition information. In this way, they may help to make judicial reporting more effective.

Summary

Complete and timely reporting of court dispositions by judicial personnel should be an important goal of any data quality enhancement program. The reporting of such data by prosecutors, however, may represent an effective interim approach in jurisdictions where the full cooperation of court personnel cannot be obtained.

STRATEGY:**PRE-PRINTED DISPOSITION REPORTING FORMS*****Using Pre-printed Forms to Facilitate the Reporting of Dispositions and the Linking of Arrest and Disposition Data***

A number of states have improved disposition reporting and facilitated the matching of arrest and disposition data by using pre-printed disposition reporting forms of varying kinds.

Pre-printed Forms

Typically, pre-printed forms consist of multiple-page sets of color-coded pages or tear-off sections to be used by each reporting agency for reporting data to the repository. The arresting agency enters identification data and arrest charges on the top page, mails the information to the state repository and passes the remaining parts of the form to the next agency in the criminal justice process, for example, the prosecutor's office or the court where the arraignment takes place. Each agency enters appropriate, reportable event information, mails its page or form to the repository and passes the remaining pages to the next agency in the process. All of the pages may have carbon backs so that case information printed on one page will appear on the other pages.

Pre-printed Notices

A variation of this approach involves the use of pre-printed notices by which criminal justice agencies both notify the repository that the case has been received and report case identification numbers. These numbers are then used to link subsequent disposition data to previously reported data. The repository enters the numbers in the system for linking purposes and mails forms back to the agency to be used in reporting disposition data when it is available. An advantage of this approach is that the pre-printed form package is less bulky. Another advantage is that the repository is notified when the case is received by each criminal justice agency. A disadvantage, however, is that more forms must be exchanged, which increases the chances that the process will break down.

Typically, the pre-printed forms use a tracking number to identify the case and to facilitate the matching of data reported by different agencies. The numbers may be pre-printed on the forms or spaces may be provided for the entry of the numbers. Pre-ad-

dressed mailing envelopes may be provided to facilitate the forwarding of disposition reporting forms to the repository.

A weakness in these systems is that they require the cooperation of several criminal justice officials at various stages of the case, and the failure of any one of them can cause the system to break down. Other weaknesses are heavy reliance on the inter-agency postal service to exchange forms and the handling of a large number of forms. To ensure that such a system will work, some way of monitoring compliance must be implemented, such as a disposition reporting monitoring system (itself another Data Maintenance Strategy).

Summary

If properly implemented and monitored, pre-printed disposition reporting forms can increase disposition reporting levels at all stages of the system and also facilitate the accurate linking of arrest data and disposition data. Use of such forms requires the cooperation of criminal justice personnel at all levels of the justice system.

IV. REGULATORY STRATEGIES

Regulatory Strategies can significantly increase the chances that any initiative to improve data quality will succeed by ensuring that data quality procedures are understood and properly implemented. Such strategies help maintain continuity and consistency in agency procedures and personnel performance. These strategies include:

- developing written agency procedures; and
- implementing a program of standardized training for agency personnel with recordhandling responsibilities.

STRATEGY:**WRITTEN AGENCY PROCEDURES*****Formulating Written Agency Policies and Procedures
Relating to Data Quality***

In every criminal justice agency, policies and procedures relating to information handling — particularly those relating to data quality — should be set out in written documents. Although there is wide agreement on the need for such written policies and procedures, it is surprising how few agencies, large or small, have adequate policy documentation. The development of written procedures for data quality can in itself be an important data quality strategy, since it requires agency officials to review existing policies and procedures and to focus on their adequacy and effectiveness. This exercise commonly results in the improvement of existing procedures and the identification of areas in which existing policies and procedures are lacking or inadequate to meet legal or functional requirements.

Purpose

Once developed, written procedures and manuals serve several important purposes. First, they greatly assist in the training and supervision of new personnel. If written in enough detail, they can provide continuing guidance to agency personnel, thus ensuring that such activities as source document interpretation and data entry are performed correctly and consistently. Second, they provide a basis for reviewing personnel performance and determining whether additional training is necessary. Finally, they provide a basis for auditing agency performance and serve as a departure point for planning and developing improvements in data quality activities.

Summary

The development and issuance of policy documentation in the form of written agency procedures and manuals should be a major goal of all data quality improvement programs. In addition to resulting in better data quality, such procedures require agency officials to review the adequacy and effectiveness of existing procedures and provide a basis for continuity in a data quality program.

STRATEGY:

STANDARDIZED TRAINING

Implementing a Program of Standardized Training for Agency Personnel with Recordhandling Responsibilities

Closely related to the need for detailed written procedures is the need for an ongoing standardized training program for employees with data quality responsibilities. It is an unfortunate reality that, in many criminal justice agencies, data entry and document processing personnel are among the lowest paid employees. Due to the resulting low motivation levels and high turnover rates among such personnel, many agencies find it difficult to recruit and retain qualified employees to perform these functions.

Training

Standardized training, both at the entry level and on a continuing basis, can help to ensure that data handling functions are performed correctly and consistently. Such training should, therefore, be viewed as a necessary and routine part of agency activities.

Training programs should use written agency policy statements and detailed manuals and instructions. The programs should stress the need for adequate employee skills and standardized performance routines, but should also cover such matters as legal and policy requirements, privacy and security considerations, and the risk that the agency or its personnel will be liable for mishandling sensitive information.

If properly developed and implemented, this type of training program will help increase employee motivation by stressing the importance of data quality activities and will lead to improved performance and enhanced data quality levels. It can also help to ensure consistent, standardized performance, notwithstanding employee turnovers. In addition, the very development of training programs focus attention on agency policies and procedures, which in itself leads to improvements that help to enhance data quality.

Summary

Agencies that do not already have them should place a high priority on the development and implementation of standardized training programs for data handling personnel. Such programs, which should include appropriate written procedures and manuals, will help ensure data handling functions are performed accurately and consistently.

APPENDIX

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- Corrections (annual)
- Juvenile corrections (annual)
- Courts (annual)
- Privacy and security of criminal history information and information policy
- Federal statistics (annual)
- BJS bulletins and special reports (approximately twice a month)
- Sourcebook of Criminal Justice Statistics (annual)

Single copies of reports are free; use NCJ number to order. Postage and handling are charged for bulk orders of single reports. For single copies of multiple titles, up to 10 titles are free; 11-40 titles \$10; more than 40, \$20; libraries call for special rates.

Public-use tapes of BJS data sets and other criminal justice data are available from the National Archive of Criminal Justice Data (formerly CJAIN), P.O. Box 1248, Ann Arbor, MI 48106 (toll-free 1-800-999-0960).

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Cultivation & production
Foreign
Domestic

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Transshipment
Import into U.S.

Finance
Money laundering
Profits

The fight against drugs

Enforcement
Border interdiction
Investigation
Seizure & forfeiture
Prosecution

Consumption reduction
Prevention
Education
Treatment

Consequences of drug use

Abuse
Addiction
Overdose
Death

Crime
While on drugs
For drug money
Trafficking

Impact on justice system

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